Decision Memo

Carr/Delta Fire Road Maintenance and Safety Project

Township 35 & 36 north, Range 6 west, Townships 34 & 35 north, Range 7 west, and Township 34 north, Range 8 west, Township 33 north, Range 5 west, and Townships 36 north, Range 5 & 6 west, Mt. Diablo Meridian.

USDA Forest Service
Shasta-Trinity National Forest
Shasta and Trinity Counties, California

Background

The Carr fire ignited on July 23, 2018 along Highway 299 and Carr Powerhouse road. It is listed as the seventh-most destructive fire in California's history, burning approximately 229,651 acres of multi-administered lands including Bureau of Land Management, Forest Service, National Recreation Area, State Historic Park, and private property. The fire burned approximately 69,539 acres of Shasta-Trinity National Forest system lands, with roughly 46% resulting in moderate to high vegetative severity.

The Delta fire started in the morning of September 5, 2018, approximately two miles north of Lakehead, California. The fire mostly burned on National Forest System lands; however, other public lands and private property were also affected. The fire burned approximately 63,311 acres. By September 11, the fire was a few miles away from burning into the Carr Fire and when both fires reached their final containment they were said to be within a few hundred feet from each other.

Purpose and Need and Decision

The purpose of this project is to address the current maintenance needs of selected roads within the Carr Fire and Delta Fire footprints on National Forest System lands. In addition to the fire creating hazard trees along the roads, the fires have resulted in numerous hazardous conditions to the roadway itself. Additional hazardous conditions are expected to emerge post-fire with increased surface runoff and reduced ground cover and eventually from deterioration of root systems.

Road maintenance activities may occur on all National Forest Transportation System (NFTS) roads, as well as roads managed by other jurisdictions that cross Forest Service managed lands. Felling and removal of hazard trees will be restricted to lands managed by the Forest Service.[1]

[1] On lands not managed by the Forest Service, trees that are deemed hazardous to operations will be felled and left.

Roads to be treated are NFTS roads categorized as Maintenance Level 2 and 3[2]. National Forest System roads categorized as Level 1 roads[3] will be treated if they are a cost share road or if the road is needed for project implementation (access).

The following activities are proposed to address these purposes: blading; brushing; felling and removal of roadside hazard trees; repair and improvement of road surfaces; cleaning, repair, and installation of drainage structures such as culverts, ditches, catch basins, and dips; dust abatement; removal and installation of closure barriers; installation and repair of signs; and treatment of activity created fuels. The following approximate number of miles (by road level) will be treated, for a total of 177 miles (see Appendix B for project reference map).

- 8 miles of level 1
- 165 miles of level 2
- 4 miles of level 3

The identification of hazard trees will follow the Region 5 Hazard Tree guidelines[4]. The hazard tree falling area will extend up to 300 feet from the road edge on the uphill side and down to 150 feet from the road edge on the downhill side of each road treated. Hazard trees will be felled on approximately 4,263 acres along 79 miles of road.

Commercial wood products will be removed where feasible on approximately 1,952 acres along 35 miles of road within the 79 miles described above. Ground based and/or cable logging systems will be used. Landings and skid trails are critical for handling and storing woody material prior to hauling; they will be utilized and created to facilitate wood product removal. Some native surface roads may be used to skid logs. Temporary roads may be needed to access landings, and will be decommissioned after use. Level 1 roads needed for project implementation will be closed after use.

Activity created fuels[5] will be treated using a combination of hand, mechanical, and prescribed fire treatments. Removal of commercial wood products will also reduce activity fuels.

In addition to the activities discussed above, an interdisciplinary team has developed resource protection measures designed to reduce or eliminate adverse effects to resources. They are listed in Appendix A of this document.

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[2] Maintenance Level 2 roads are managed for use by high clearance vehicles. Passenger car traffic, user comfort, and user convenience are not considerations. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Level 3 roads are open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities.

[3] Maintenance Level 1 roads are those that have been placed in storage between intermittent uses. Basic custodial maintenance is performed to prevent damage to adjacent resources and to perpetuate the road for future resource management needs. These roads are not shown on motor vehicle use maps. While being maintained at Level 1, they are closed to vehicular traffic but may be available and suitable for non-motorized uses.

[4] P. Angwin, D. Cluck, P. Zambino, B. Oblinger, W. Woodruff. April 2012. Hazard Tree Guidelines for Forest Service Facilities and Roads in the Pacific Southwest Region. Forest Health Protection Pacific Southwest Region (Report # RO-12-01).

[5] Fuels created from falling of hazard trees.

Reasons for Categorically Excluding the Decision

Based on the actions proposed and my familiarity with projects similar in nature, I have determined that a Categorical Exclusion is appropriate in this case. The actions described above are described in category 36 CFR 220.6(d)(4), *repair and maintenance of roads, trails and landline boundaries.* Forest Service policy is to manage roads for safe passage by road users. Maintenance along roads involves maintaining safe passage and includes removal of unwanted vegetation, including the removal of hazard trees. This project fits within the category specified at 36 CFR 220.6(d)(4).

A review of resource conditions that may warrant further analysis (extraordinary circumstances) was prepared. As discussed in the table below, I have found that there are no extraordinary circumstances that indicate the presence of significant effects

Resource Conditions (36 CFR 220.6(b))	Resource Condition Present?		For Resource Conditions that are Present, the following Findings are made:	Reference material used to support finding of no extraordinary circumstance
	Yes	No		
Proposed, Threatened, or Endangered Terrestrial Wildlife Species or Their Designated or Proposed Critical habitat	X		This project may affect, but is not likely to adversely affect the northern spotted owl and NSO Critical Habitat. Implementation of Limited Operating Periods will prevent disturbance or harm during the nesting season. All acres of suitable/dispersal habitat within units will be benefitted or maintained by project activities. Prescribed burning within suitable habitat/critical habitat will be designed to maintain habitat quality and functionality while reducing the risk of habitat loss due to future high severity wildfire, insects or disease. All other Threatened, Endangered, or Proposed species would not be affected by this project. The project will benefit and/or maintain NSO critical habitat in the Interior California Coast Critical Habitat Subunit (ICC 7).	Carr-Delta Fire Road Maintenance Project PIF-BA. Ann Bowers Forest Biologist, Shata Trinity National Forest May 23, 2019
Forest Service Sensitive Terrestrial Wildlife Species	X		The project may affect individuals but will not result in a trend towards federal listing or loss of viability for the following Forest Service Sensitive Species: northern goshawk, bald eagle, pallid bat, Townsend's big-eared bat, fringed myotis, Pacific marten, fisher, foothill yellow-legged frog, Shasta salamander, western pond turtle, western bumble bee, Shasta chaparral snail and Shasta hesperian snail. This determination is based on the seasonal restrictions and other resource protection measures that are in place to greatly reduce or eliminate effects to key habitat components such as downed logs, large trees and riparian areas. No other Forest Service Sensitive Species are known or expected to occur in the project area.	Wildlife Report Carr/Delta Road Maintenance and Safety Project. Todd Johnson Wildlife Biologist, Shasta-Trinity National Forest. April 15, 2019

Proposed, Threatened, or Endangered Aquatic Species or Their Designated or Proposed Critical habitat, or FS sensitive aquatic species	X		No Proposed, Threatened, or Endangered (including Candidate) fish species or critical habitats will be adversely affected by this project because none of these species or their habitats occur within the project area. USFS Sensitive hardhead fish may be incidentally present in Shasta Lake reservoir arms downslope or downstream from project-affected areas, but there should be no effect to them because of the numerous RPMs and BMPs applicable to this Project. Therefore, no extraordinary circumstances exist regarding this Project for fish resources.	Fish Biological Assessment- Evaluation, Essential Fish Habitat and Management Indicator Fish Species Reports. William Brock, Fish Program Manager. Shasta-Trinity National Forest. April 19, 2019
Proposed, Threatened, or Endangered Plant Species or Their Designated or Proposed Critical habitat, or FS sensitive plant species	X		No Proposed, Threatened, or Endangered (including Candidate) botanical species or critical habitats occur within the project area. There are known populations of both Region 5 Sensitive vascular plants and fungi within the project area. Resource protection measures have been established to prevent undesirable affects to these populations. No extraordinary circumstances exist for this resource.	Memorandum - Carr Delta Fire Road Maintenance and Safety Project. Brenna Montagne Botanist,Shasta-Trinity National Forest. April 12, 2019
Floodplains, wetlands or municipal watersheds	X		There are no floodplains present. Wetlands are present within the project area. Areas with hazard tree falling will increase ground cover and reduce energy of surface water flows, while promoting safety in high visitor use areas. Areas designated for commercial removal will have activity generated slash utilized to generate additional ground cover and will likely be chipped or lopped and scattered. This treatment will promote more rapid recovery than in untreated areas. There are numerous municipal water systems within the project area. This project is likely to reduce existing chronic sources of sediment generated by roads and wildfires by improving road drainage and from increasing ground cover with activity generated slash that will help to decrease surface runoff and improve water quality draining from the treatment areas. No extraordinary circumstances exist for these resources.	Watershed Specialist Review - Carr Delta Fire Road Maintenance and Safety Project. Christine Mai Watershed Program Manager, Shasta-Trinity National Forest. April 15, 2019
Congressionally designated wilderness, wilderness study areas, or National Recreation Areas		X		
Inventoried roadless areas or potential wilderness areas	X		Project activities will occur within three inventoried roadless areas (IRAs). However, due to the small proportion of the IRAs affected and the way in which project activities will be implemented (including the application of Resource Protection Measures) there will not be a significant effect to any of the nine Roadless Values identified in the Roadless Area	Memorandum Re: Inventoried Roadless Areas Analysis. Chris Losi, Sup. Environmental Coordinator, Shasta-Trinity National Forest. May 11, 2019

			Conservation Rule of 2001 (Roadless Rule). Therefore, no extraordinary circumstances exist regarding this Project for inventoried roadless areas.	
Research Natural Areas		X		
American Indians and Alaska Native religious or cultural sites		X[6]		
Archaeological sites, or historic properties or areas	X		Site protection measures will be considered in a site-specific manner to ensure adequate protection based on particular site types and existing conditions on the site. Through the application of the Standard Protection Measures for historic properties located within the project's APE that are outlined above, there is no uncertainty that there will be no significant effects to archaeological sites, historic properties, or areas. No extraordinary circumstances exist for cultural resources.	Cultural Resource Report No. R2018051400114. Prepared by Peter Schmidt, Reviewed by Matthew Padilla, April 26, 2019

Public and Tribal Involvement

The Forest began public scoping for the Carr Fire Road Maintenance and Safety Project in late September 2018. After the scoping comment period had closed, Forest identified additional roads within the adjacent Delta Fire area that required maintenance. These additional roads were added to the original proposal, and the project name was changed to the Carr/Delta Fire Road Maintenance and Safety Project. A second scoping letter detailing the revised project was sent to interested parties in late November 2018 describing these changes to the project.

During the two scoping periods, public comments were received from 10 individuals and entities for a total of 15 letters. Substantive comments that relate to extraordinary circumstances or compliance with other laws and regulations are addressed in this Decision Memo or supporting documentation.

I initiated Tribal Consultation in October and November 2018, concurrent with the scoping comment periods. No comments were received from federally-recognized tribes as part of the invitation to consult.

Findings Required by Other Laws

This project is in compliance with the Endangered Species Act. The Forest Service has initiated informal consultation with the Yreka office of the U.S. Fish and Wildlife Service (FWS) regarding terrestrial Threatened and Endangered Species. Informal consultation will be completed prior to implementation. As there will be no effect on aquatic Threatened and Endangered Species, consultation with the National Marine Fisheries Service is not required.

[6] None were identified as part of Tribal Consultation

This project complies with the Clean Water Act and other State, interstate, and local requirements regarding the discharge and runoff of water pollutants. The road maintenance activities approved by this project fall under the jurisdiction of the North Coast Regional Water Quality Control Board (NCWQCB) and the Central Valley Regional Water Quality Control Board (CVWQCB) which regulate activities with the potential to impact water quality to tributaries of Trinity Lake and tributaries of the Sacramento River, respectively. Project activities in the North Coast Region qualify under Category A of the Forest Service Waiver[7] (activities with a low potential impact to water quality). No Application or permit is required for activities covered under Category A and no mitigation measures are required by the NCWQCB (although resource protection measures will mitigate potential impacts to water quality). Project activities in the Central Valley Region qualify under Category 5A of the General Order[8] (US Forest Service Post fire Timberland Management Activities). This project will be enrolled under the CVWQCB General Order after this decision memo is signed and prior to project implementation. Additionally, resource protection measures have been included to mitigate potential impacts to water quality.

This project complies with the Clean Air Act. The Shasta County Air Quality Management District (AQMD) has jurisdiction over prescribed fire activities within the project area and ensures compliance with the Clean Air Act. In accordance with AQMD direction, a smoke management plan will be developed, submitted, and approved prior to implementation of prescribed fire. Smoke management procedures will ensure adequate smoke dispersion and will minimize impacts to areas of high use.

Project Resource Protection Measures reduce the risk of introduction of new weed species into the project area, and to reduce the risk of spreading existing weeds in the project area consistent with Forest Service policy and Executive Order 13571 of December 8, 2016.

This project will have no adverse effect on historic properties and will be in compliance with the National Historic Preservation Act (and 36 CFR § 800), Executive Order 11593, the American Indian Religious Freedom Act, and Executive Order 13007. The stipulations included in the 2018 Programmatic Agreement[9] will be followed.

This project is consistent with the Forest Plan.[10] Portions of this project lie within the Clear Creek Late Successional Reserve (LSR). Although the Forest Plan imposes limitations on timber

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[7] *Waiver of Waste Discharge Requirements for Nonpoint Source Discharges Related to Certain Federal Land Management Activities on National Forest System Lands in the North Coast Region*, North Coast Regional Water Quality Control Board. Order No. R1-2015-0021.

[8] *Waste Discharge Requirements General Order for Discharges Related to Timberland Management Activities for Non-Federal and Federal Lands*, California Regional Water Quality Control Board Central Valley Division, Order R5-2017-0061.

[9] *Amended Programmatic Agreement among the U.S.D.A Forest Service, Pacific Southwest Region (Region 5), California State Historic Preservation Officer, Nevada State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding the Processes for Compliance with Section 106 of the National Historic Preservation Act for Management of Historic Properties by the National Forests of the Pacific Southwest Region*.

[10] USDA Forest Service. (1995). *Shasta-Trinity National Forest Land and Resource Management Plan.* Redding, CA: USDA-Forest Service.

harvest within LSRs, road maintenance (including hazard tree felling) is recognized as an appropriate activity. Further, the Clear Creek LSR Assessment (including updates) approves timber salvage (sale of fire-killed and damaged trees) as a way to reduce fuel loading within the Clear Creek LSR.[11]

Implementation

This decision may be implemented immediately.

Administrative Review Opportunities

This decision is not subject to appeal or objection under Forest Service Regulations at 36 CFR 218.

Contact Information

For additional information concerning this decision, contact: Stephanie Riess, Shasta Trinity National Forest, Trinity River Management Unit, 360 Main Street, Weaverville, CA 96093, telephone (530) 623-2121. Electronic copies of this and other project documents can be found on the Forest's website at https://www.fs.usda.gov/project/?project=54599.

_____*/s/ scott russell*_____ **____6/6/19_____**

Scott Russell, Forest Supervisor Date

[11] USDA Forest Service. (1997). *Clear Creek Late-Successional Reserve (RC-334) Management Assessment*. Redding, CA: USDA-Forest Service.

USDA Forest Service. (2000). *Clear Creek Late Successional Reserve RC-334 LSR Assessment Update 1.1*. Redding, CA: USDA-Forest Service.

Regional Ecosystem Office (2001) *Memorandum from Stephen J. Odell, Executive Director; Re: Regional Ecosystem Office Review of Clear Creek Late Successional Reserve Assessment (LSRA) on the Shasta-Trinity National Forest*. Portland, OR: USDA-Forest Service and Bureau of Land Management

Appendix A

Carr/Delta Fire Road Maintenance and Safety Project
Resource Protection Measures

All Project Activities

1. If inadvertent effects occur to a historic property, a unit archaeologist will be notified immediately. The unit archaeologist will then work with the Forest HPM to determine whether the effect is adverse. The Forest will submit written notification to the Regional Heritage Program Leader and SHPO within two working days and will consult with SHPO and other consulting parties or Indian tribes, as appropriate, to develop acceptable mitigation and treatment measures.

2. If new cultural resources are discovered during project activities, all work in the vicinity will cease until the Heritage Program Manager or qualified Heritage Program Staff examines and assesses the resource. Appropriate measures will be undertaken to protect the new resource as activities resume.

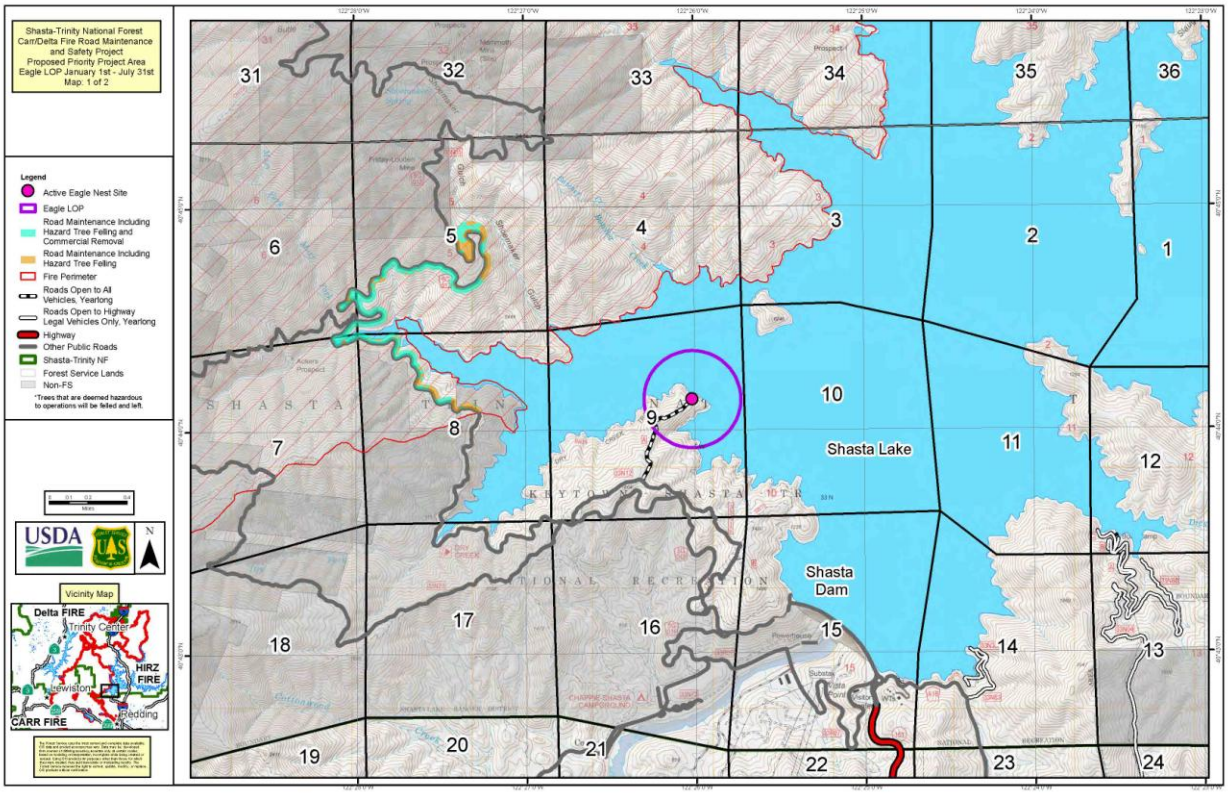
3. Potential habitat for threatened, endangered, proposed, candidate, Forest Service sensitive, survey and manage, or endemic plant, lichen, and/or fungi species must be surveyed or be determined unsuitable habitat by a Shasta Trinity National Forest botanist or designee prior to work beginning in the project area.

4. In the event any new populations of a threatened, endangered, proposed, candidate, Forest Service sensitive, survey and manage, or endemic plants, lichens and/or fungi species are discovered during the various phases of the project, the area will be flagged and avoided until a Shasta Trinity National Forest botanist or designee can be consulted.

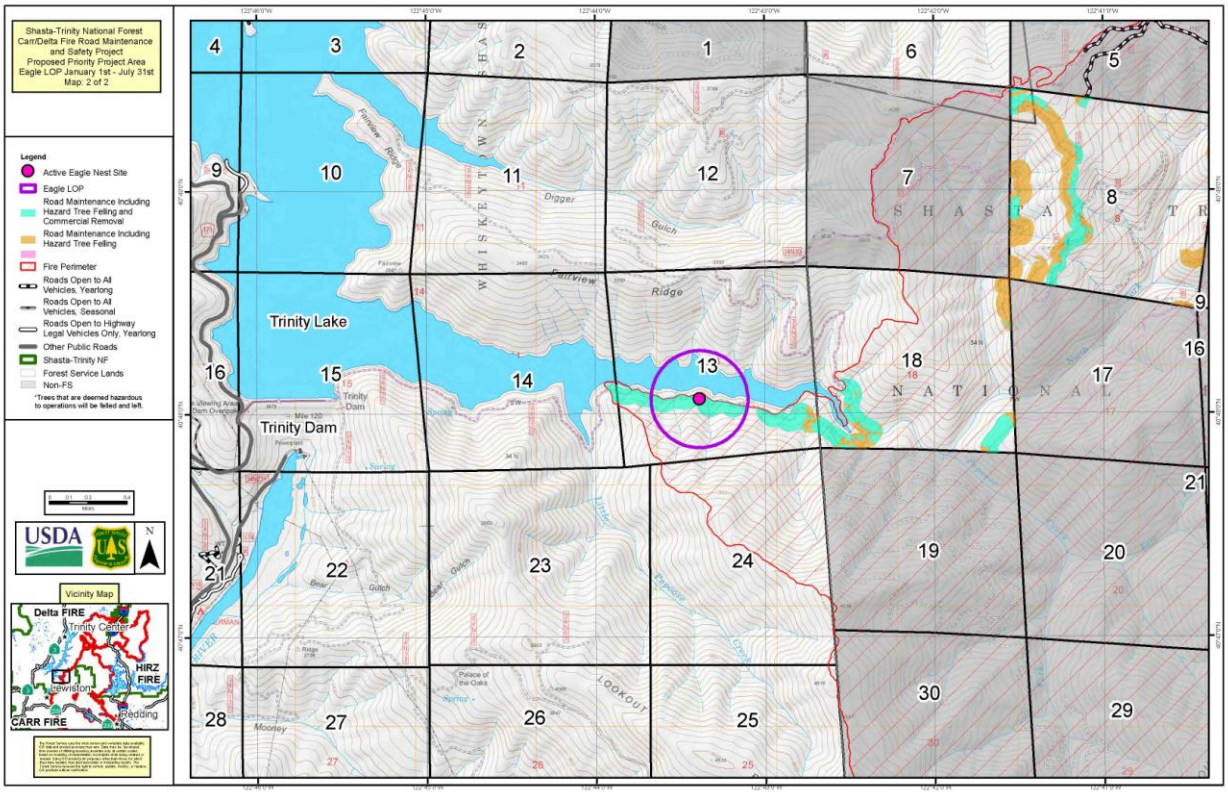
5. Project equipment will be washed (a) prior to beginning work in areas of Port Orford Cedar that are uninfested with *Phytophthora lateralis* (Port Orford Cedar Root Disease), (b) when leaving infested areas to work in uninfested areas, and (c) when leaving the project area to minimize the transportation of infested soil to uninfested areas. Equipment may include project vehicles, including trucks and crew vehicles. Wash water is best taken from uninfested water sources or is treated with Clorox bleach (See Botanical Resource Report). Washing will occur away from water sources such as creeks and rivers. Wash water should not drain into watercourses or into areas uninfected with *Phytophthora lateralis.* Equipment moving into these uninfested areas may be washed miles away as long as it does not travel through infested areas to reach their destination.

6. To reduce disturbance to breeding goshawks, from March 1 to August 31 project activities that result in loud and continuous noise above ambient levels within 0.25 mile of an active northern goshawk nest are restricted. This seasonal restriction may be lifted if surveys determine no nesting activity.

Map A-1: Eagle Nest Site on Trinity Lake



Map A-2: Eagle Nest Site on Shasta Lake



7. Two bald eagle nest territories are present within the analysis area. To reduce disturbance to breeding bald eagles, from January 1 to July 31 project activities that result in loud and continuous noise above ambient levels within 0.25 mile of an active bald eagle nest are restricted. This seasonal restriction may be lifted if surveys determine no nesting activity. See Map A-1 and A-2.

8. To reduce disturbance to breeding martens, from March 15 to June 1 project activities that result in loud and continuous noise above ambient levels within 0.25 mile of an active marten den are restricted. While there are currently no known marten den sites within the project area, if a marten den site is found in the future this restriction would apply.

9. To reduce disturbance to breeding fisher, from March 15 to June 15 project activities that result in loud and continuous noise above ambient levels within 0.25 mile of an active den are restricted. While there are currently no known fisher den sites within the project area, if a fisher den site is found in the future this restriction would apply.

10. If any other reproductive locations (nests, dens, etc.) of Forest Service sensitive wildlife species are discovered, they will be given protective measures appropriate to the biological requirements of the individual species involved and the treatment planned for that particular site, prior to implementation.

11. Northern Spotted Owl (NSO): Where applicable, limited operating periods (LOPs) will be implemented to avoid potential impacts to NSO: Refer to Map A-3 for NSO Core Areas where LOPs will apply in the project area.

    LOPs for this project are for noise and smoke disturbance only. This LOP, where operations are prohibited, runs from February 1st to July 9th in unsurveyed NSO Core Areas in the Action Area.

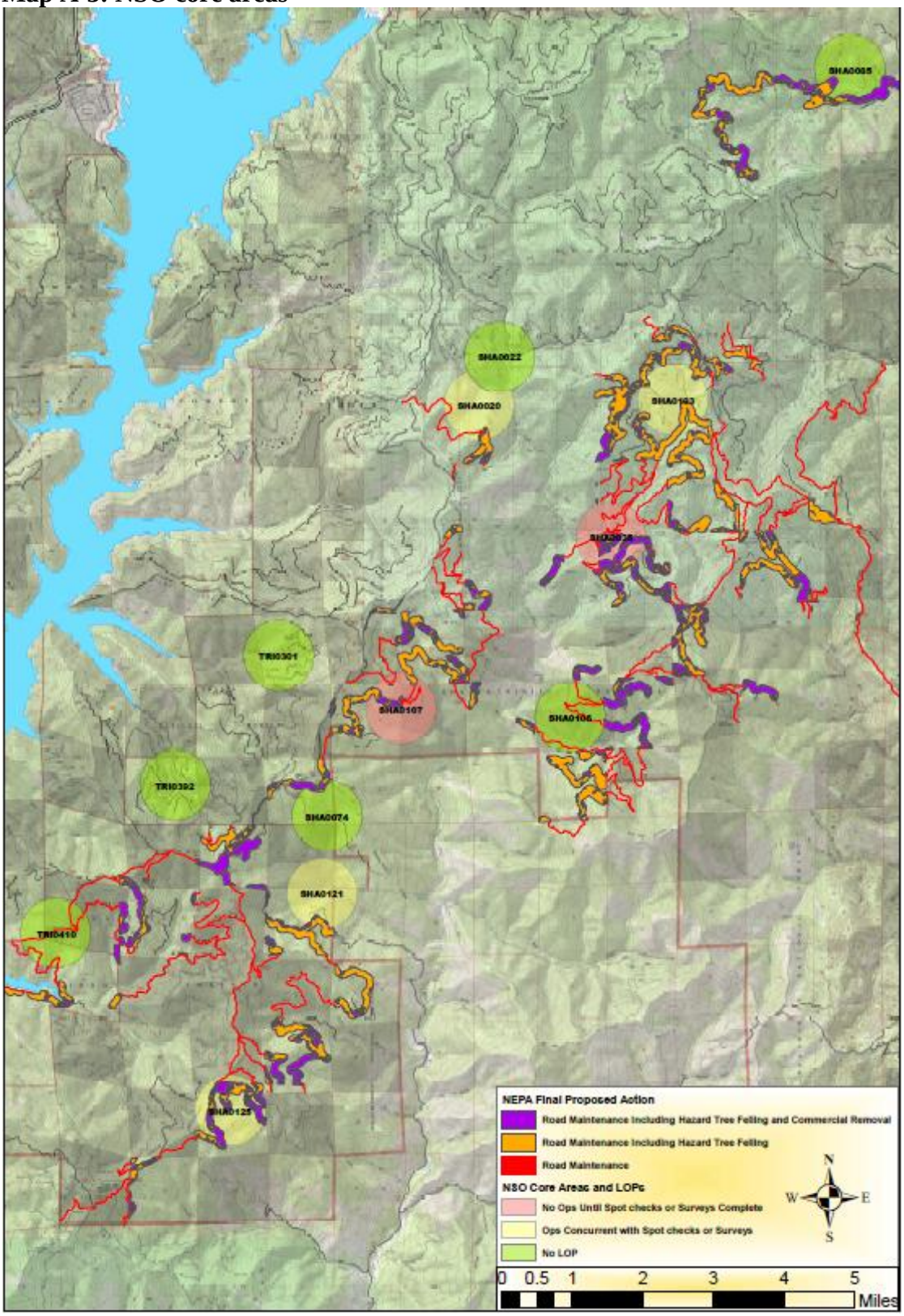
    Spot checks may be conducted for two years after full 2-year protocol surveys have been completed (USFWS 2012). Generally, spot checks are conducted between March 15th and April 15, or as access permits.

    I) For the 2019 implementation season, STNF will not conduct spot checks for units in Core Areas. Implementation will not commence in these units until July 10th or thereafter, when the LOP for noise and smoke has lapsed for the season.

    II) For the 2020 implementation season:

    - In Core Areas **SHA0035 and SHA0107**, the LOP applies unless and until spot checks indicate there is no nesting activity. If spot checks indicate no nesting activity, implementation can resume as early as April 15th, or when spot checks are completed during a 4 week time period agreed to by FS/USFWS Level 1 staff. If spot checks detect nesting activity, work will not begin until July 10th.
    - In Core Areas **SHA0020, SHA0103, SHA0121, and SHA0125**, implementation may proceed concurrently with spot checks. Work will be suspended through July 9th if spot checks indicate that nesting activity is occurring.

Map A-3: NSO core areas



III) In subsequent implementation years, for this project, either spots checks or full surveys may be required for Core Areas, as agreed by FS/USFWS Level 1 staff prior during any calendar year where implementation is planned to occur.

12. Gray Wolf: If new information from the State or other verified sources shows there are reproducing wolves within five miles of project activities, the Forest will contact USFWS for technical assistance and discuss the need for reinitiating consultation.

Ground disturbing/mechanical operations

13. Mechanical (wheeled or tracked) equipment is generally restricted to slopes less than 40 percent. On short steep pitches (less than 45% slope, and less than 100 feet in length), mechanical skidding equipment is restricted to slash-covered primary skid trails using flexible track skidders with low ground pressure equipment.

14. Hazard trees adjacent to flagged populations of Forest Service sensitive, survey and manage, or endemic plant, lichen and/or fungi species will be directionally felled away from the flagged area to avoid disturbing the population. Directionally felled trees may only be removed if it causes no ground disturbance within the flagged area. If directional felling cannot be done due to safety concerns, fall as necessary and leave on site. This may be waived by a forest botanist or designee depending on the species present and its phenology. Flagging will be used to delineate avoidance boundaries.

15. All equipment to be used off-road would be cleaned using either washing or high pressure air before moving into the project area to ensure equipment is free of soil, plant propagules, or other debris that may contain invasive plant seeds. All equipment used for off-road activities will be cleaned prior to leaving the project area.

16. Avoid staging equipment where invasive plants occur. If avoidance is not feasible, contractor shall treat staging areas prior to using (e.g. manual or mechanically remove and contain materials) and maintain as needed throughout the life of the project. Locate treated material on site and out of the way of equipment operations. If invasive plants are in a condition to disperse seed, bag and dispose of them properly to avoid seed dispersal.

17. Any seed mixes or other vegetative material used for re-vegetation of disturbed sites will consist of locally adapted native plant materials to the extent practicable. Nonnative grass species such as perennial wheat or rye are not allowed. Any materials (mulches, gravel, fill, etc.) placed within the project area must be documented as California certified weed free. Materials where State inspection protocols do not exist will be inspected by a Forest botanist or designee prior to use.

18. All historic properties within the cultural resources Area of Potential Effects (APE) will be field verified and monitored, the results will be documented on appropriate forms, and site boundaries will be clearly delineated with coded flagging and/or other effective marking prior to implementing any project activities in areas that have the potential to affect historic properties. Historic property location and boundary information will be

conveyed to appropriate Forest Service administrators or employees responsible for project implementation so that pertinent information can be incorporated in planning and implementation documents, contracts, and permits.

19. No skidding or tracked equipment shall be allowed within historic property boundaries, unless specified below.

20. Trees or vegetation may be removed from within the boundaries of historic properties using 1) hand tools, by hand bucking, including the use of chain saws, and hand carrying; 2) employing mechanical equipment parked outside the historic property; 3) employing mechanical equipment parked within areas of the historic property that have been pre-approved by the Heritage Program Manager (HPM) or a qualified archaeologist; or 4) by rubber-tired equipment that has been pre-approved by the Heritage Program Manager (HPM) or a qualified archaeologist.

21. Activities may be implemented within historic property boundaries over snow cover if there is at least 12 inches depth of compacted snow or ice throughout the duration of activities occurring there, so long as all concentrated work areas (e.g., landings, skid trails, turnarounds, and processing equipment site) are located prior to snow accumulation and outside historic property boundaries.

22. Linear historic sites (e.g., historic trails, roads, railroad grades, ditches) may be crossed or breached by equipment in areas where their features or characteristics clearly lack historic integrity, as determined by the Forest HPM. The following stipulations must be followed for linear site crossings:
    a. Crossings are not to be made at the points of origin, intersection, or terminus of linear site features.
    b. Crossings are to be made perpendicular to linear site features.
    c. The number of crossings is to be minimized by project and amongst multiple projects in the same general location.
    d. The remainder of the linear site is to be avoided, and traffic is to be clearly routed through designated crossings.

23. To protect habitat for FS sensitive snails and Shasta salamander: directionally fell hazard trees away from rock outcrops and talus slopes, avoid heavy equipment use on rock outcrops and talus slopes, and avoid piling and burning on rock outcrops and talus slopes.

24. Any tail hold trees felled outside of the area to be treated will be left onsite where they lay. In NSO nesting/roosting or foraging habitats, all tail holds will be approved by a wildlife biologist or designee prior to cutting, and cutting of tail hold trees over 24" DBH in these habitat will be avoided when feasible.

25. To avoid impacts to Shasta salamander, the three known locations of Shasta salamander near Forest Road 5G012 will be flagged and no ground-disturbing activities will occur when salamanders may be surface active (October 15 through May 30).

Landings and skid trails

26. Mechanical skidding equipment is generally restricted to slopes less than 40 percent. On short steep pitches (less than 45% slope, and less than 100 feet in length), mechanical skidding equipment is restricted to slash-covered primary skid trails using flexible track skidders with low ground pressure equipment.

27. All material will be skidded with one end suspended, where possible. Full suspension is required over streams, active landslides and inner gorges.

28. Reuse existing primary skid trails and landings where available and practical to minimize soil displacement and concentrated surface flow.

29. No skid trails will be built on active landslides or inner gorges, and no existing skid trails on active landslides or inner gorges will be used.

30. Skid trails will not run parallel to intermittent channels or swales.

31. Till (subsoil to 18 inches) all landings identified for rehabilitation, temporary roads, and main skid trails (up to 200 feet entering landings) that have fine textured soils with a winged-subsoiler (preferred) following completion of all management activities. Tillage will be completed outside of the tree drip-line so as not to impact root systems. For rocky soil, scarification[12] will be used to restore sites. These areas should be mulched utilizing certified weed free materials or onsite slash that is lopped and scattered or chipped at a rate of 1.5 to 2 tons per acre (approximately 4 to 6 inches in depth) over a minimum of 75 percent of the exposed soils, where necessary, to prevent erosion.

32. Minimize soil erosion by water-barring skid trails. Install water bars on contour at major breaks in slope along the skid trails.

33. New landings will be located on gentle slopes (<20%) to minimize earthwork, and will avoid unstable areas, steep slopes below landslide benches, and slope positions where they could deliver sediment to streams. Cuts and fills would not exceed 5 feet in height, unless field reviewed and approved by an earth scientist beforehand.

34. Pull organic materials out of fill slope of landings to prevent collapse.

35. Landings will have natural, non-constructed designs. If non-constructed design is not feasible, landings will be constructed to adequately drain through crowned surface and directed drainage with catchment structures (rock armoring and/or silt fences with straw bales may be used as necessary). All new landing fill slopes and access road fill slopes (>100 sq. ft.) would be mulched initially, and then the mulch would be maintained throughout the life of the project; mulch must be certified weed-free materials or landing slash. Areas with new road and landing fill will be rehabilitated after treatments are complete.

[12] Scarification involves light disturbance of the soil surface, as opposed to deep tilling to 18 inches.

36. New landings will occur in areas that are generally open or fire deforested, whenever possible.

37. If new landings are needed, they will be created outside of NSO nesting/roosting habitat as feasible, or if new landings are constructed within these habitats, green trees greater than 24" DBH will be retained.

Riparian Reserves

For the purposes of this project Riparian Reserves and Equipment Exclusion Zones are defined in the following table. Widths may be smaller or wider if deemed necessary during field evaluation by the earth scientist, fish biologist or designee.

Table A-1: Riparian Reserve and EEZ widths

Steam and Waterbody Category	Riparian Reserve (Minimum Extent)	Equipment Exclusion Zone (EEZ)*	Outer Riparian Reserve Zones allowing equipment
Intermittent Streams and Wetlands < 1 acre	100 feet on all sides of aquatic feature or the distance equal to one site potential tree (whichever is greater).	50 feet on all sides of aquatic features	From EEZ to outer edge of Riparian Reserve (50 feet wide)
Perennial Non-fish-bearing Streams, Springs, Seeps, and Wetlands > 1 acre	150 on all sides of aquatic feature or the distance equal to one site potential tree (whichever is greater).	75 feet on all sides of aquatic features	From EEZ to outer edge of Riparian Reserve (75 feet wide)
Perennial Fish-bearing Streams	300 on either side of channel or a distance equal to the height of 2 site potential trees, whichever is greater).	150 feet on all sides of aquatic features	From EEZ to outer edge of Riparian Reserve (150 feet wide)
Geologically Unstable and Potentially Unstable Areas	100 feet on all sides of geologically unstable and potentially unstable areas	50 above head 20 feet along sides	From EEZ to outer edge of Riparian Reserve (50 feet for head and 80 feet for sides)
***For stream channels with inner gorges, the EEZ is located 50 feet beyond the break in slope regardless of the established EEZ widths above.**			

38. All heavy equipment is excluded from Equipment Exclusion Zones (EEZs), including inner gorges, except at designated stream crossings. All EEZs will be flagged and/or signed within proposed treatment units and identified as "equipment exclusion" on project maps or as "buffer strips" in contracts.

39. Heavy equipment is prohibited from crossing perennial streams. All temporary equipment/vehicle crossings in dry intermittent and ephemeral stream channels will be designated by the qualified agency personnel prior to treatment activities. All stream crossings will be restored as much as possible to their original conditions matching upstream bed and bank properties to the extent feasible.

40. Riparian treatments to treat activity generated fuels can include burning, lopping and scattering, chipping, hand piling or piling with ground based equipment located outside

of the EEZ that has an arm with a grapple that can reach (up to 30 feet) into the EEZ.

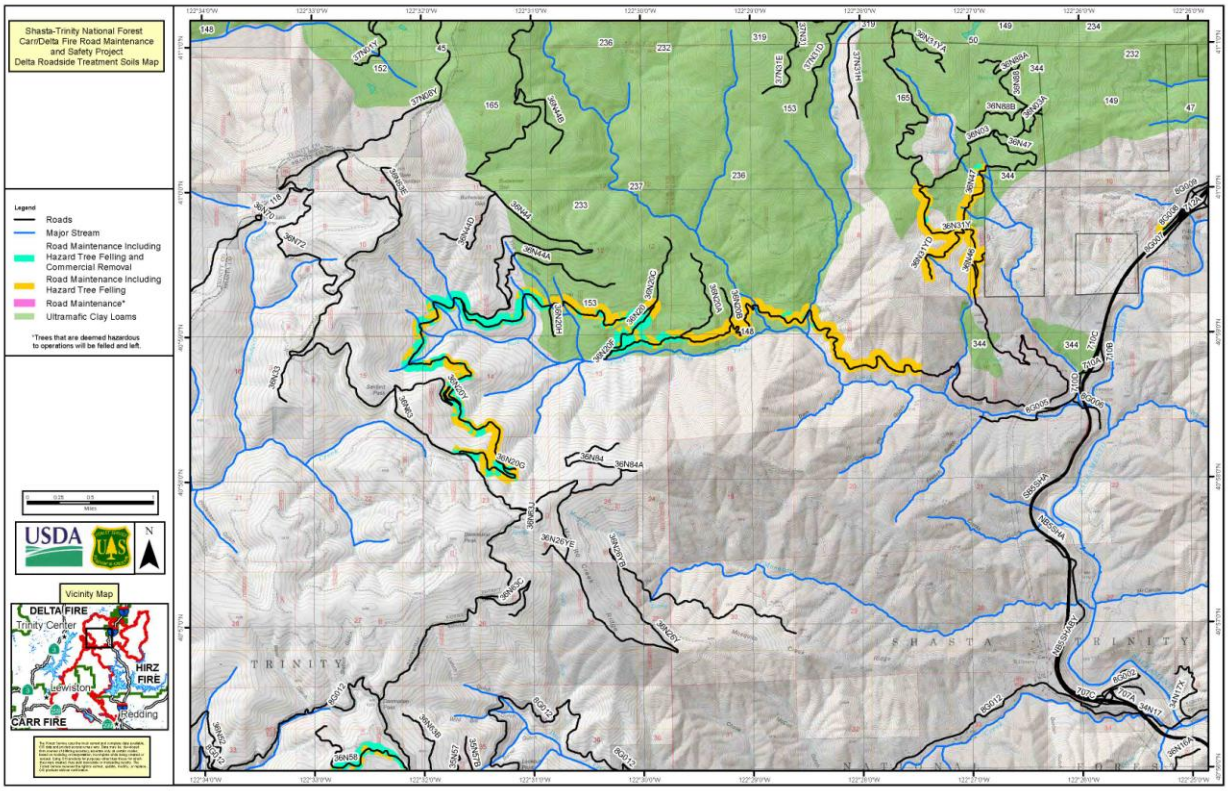
41. Hand treatments will minimize ground disturbance in the EEZ and will not disturb riparian plant species.

42. Where the inner gorge landform extends beyond the Riparian Reserve width (as defined by table A-1) then the EEZ will extend to include the entire inner gorge area and an additional 50 feet.

Naturally Occurring Asbestos (NOA)

43. All field personnel who will be working near earth-moving, or other dust-producing activities in areas underlain by ultramafic rock will be informed that NOA commonly occurs in that rock, and they will be provided with a map showing such areas. See Map A-4.

Map A-4 Areas with Naturally Occurring Asbestos (i.e. underlain by ultramafic rock)



44. Mechanical operations should operate on slightly moist or moist soils to reduce dust levels that could contain naturally occurring asbestos (NOA) in ultramafic soils.

45. Dust production in ultramafic areas will be prevented/minimized by applying effective dust abatement measures, such as: applying water or other dust inhibitors to materials being worked; operating when soil conditions are moist enough to limit dust, but not be so wet as to result in rutting or sedimentation into streams; reducing vehicle speed; and

avoiding dust-producing activities on excessively windy days. Ensure road surfaces are wet. Where needed, wet road surfaces with water trucks using sprinklers to reduce dust.

46. Where dust prevention in ultramafic areas is not possible, appropriate protection and mitigation measures will be applied so that Forest Service and contractor field personnel will not inhale such dust. These measures include, but are not limited to: closing windows on vehicles, turning on positive ventilation systems, and using appropriate air filtration masks.

47. If rock/soil waste is generated from ultramafic areas, such waste will be disposed of only where the underlying rock is also ultramafic, and it will not be mixed with other waste from non-ultramafic areas. When transporting NOA-containing material, avoid overloading trucks and cover with tarps to reduce dust. Ensure that piles of excavated material are wet and cover with tarps to reduce dust.

Wet Weather Operations

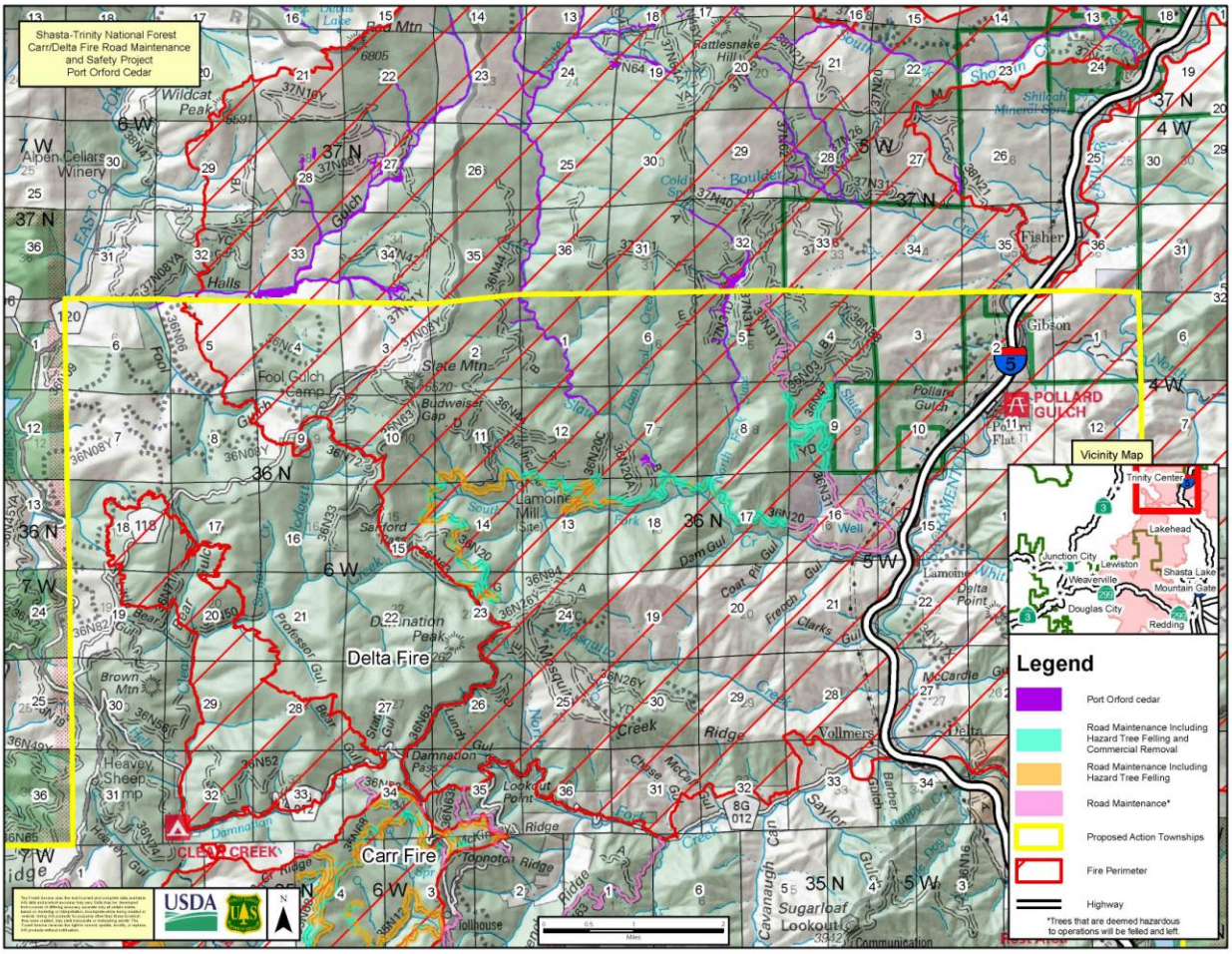
48. Wet weather logging is permitted on soils with a compaction hazard rating of moderate or less with restrictions (see Field Guide to Soil Moisture Conditions for Operability of Logging Equipment (Rust 2015) and Shasta-Trinity Wet Weather Soil Compaction Hazard Rating (Rust 2008)).

49. Wet weather logging is permitted in areas designated by a Forest botanists or designee that is not potentially infested or known to be infested with *Phytophthora lateralis* (Port Orford Cedar Root Disease). See Map A-5.

50. Ground-based mechanical equipment will only operate on fine-textured soils (identified as medium and heavy soils in the Field Guide to Soil Moisture Conditions for Operability of Logging Equipment (Rust 2015)) when the top 8 inches of soil are dry (identified as slightly moist soils in the Field Guide), as evaluated by Forest soil scientist or designee. Areas along roads proposed for treatments that have this soil type will be identified on a map for use by the Timber Sale Administrator.

51. To avoid potential watershed-related impacts, including effects to fish, timber harvest activities will occur between April 15 and October 15 (Normal Operating Season). Timber harvest activities may occur outside of the Normal Operating Season if authorized by the appropriate Line Officer when: 1) long-term weather forecast is favorable, 2) Best Management Practices (BMPs) erosion control work is current, and 3) acceptance of recommendations from a Forest Service (FS) fisheries biologist and/or hydrologist. The dates of operations may also be constrained as identified in the Forest's Wet Weather Operations Guidelines.

Map A-5: Port Orford Cedar Locations



Fuel Treatment Operations

52. Minimum soil cover standards: post-treatment total soil cover should be between 50 and 70 percent averaged across the treatment area with at least 50 percent cover as fine organic matter (duff, litter, plant leaves/needles, fine slash (<3 inch material), etc.).

53. Soil cover has been reduced and in some areas completely removed by high intensity wildfire conditions; in these areas, soil cover will be enhanced to meet minimum soil cover standards. Activity-generated slash will be utilized where available by lopping and scattering, or chipping.

54. Fuel reduction activities (machine piling using brush rakes or grapple heads) should retain >50 percent of the existing surface duff (Forest Plan Soil Quality Standards) where it currently exists.

55. For machine piling on fine textured soils, weight restrictions should be set 6.0 PSI ground pressure or less and operate on dry[13] soils less than 40 percent slope.

[13] Dry is defined as less than 18% moisture by weight.

56. Activity generated slash may be machine or hand piled on slopes less than 40 percent, and hand piled on slopes greater than 40 percent.

57. Piles shall be constructed of such size and at such distance from green trees so that burning shall not result in unnecessary damage to residual timber.

58. Leave 4-6 logs per acre, 20-inches in diameter at the large end and 10 feet long, where feasible, or the largest material available on site.

59. Prescribed fire treatments will not be allowed within 50 feet of certain identified Forest Service botanical sensitive, survey and manage, or endemic plant, lichen, and/or fungi populations. No dozer lines, hand lines or burn piles will be constructed and no mechanical activities would occur within 50 feet of these populations unless otherwise noted.

60. Avoid creating burn piles directly within any invasive species infestations; fuels may be removed by hand from within infestations and piled outside the flagged area. Orange flagging labeled in black with "NOXIOUS WEEDS" will be used to delineate avoidance boundaries.

61. Fuels treatments may be conducted within historic property boundaries under the following conditions when specifically approved by HPMs or qualified Heritage Program staff:
    a. Vegetation to be burned may only be piled within the boundaries of historic properties in locations (e.g., a previously disturbed area) that have been specifically approved.
    b. Woody material may be chipped within the boundaries of historic properties so long as the staging of chipping equipment on-site does not affect historic properties and staging areas are specifically approved.

62. To minimize impacts to breeding sensitive species (goshawk, bald eagle, marten, fisher), use methods to minimize smoke including but not limited to: burning when the forecasted wind is expected to blow smoke away from reproductive locations (nests, dens, etc.); burning small acreages to reduce the volume of smoke produced to negligible amounts; burning prior to or during precipitation events; burning for short periods of time to reduce the duration of smoke impacts; burning at the beginning of the day so that smoke is less likely to be trapped by nighttime temperature inversions; or burning at a distance from the nest/den sufficient to provide dispersed smoke conditions at the reproductive location.

63. Prescribed fire techniques could include understory burning, pile burning, or jackpot burning, with implementation taking up to 10 years. Burning will be done to create low to moderate fire behavior (flame lengths two to six feet but generally less than four feet) to meet project objectives, however flare ups and higher flame lengths and fire intensity

may occur where there are higher fuel concentrations of small ladder fuels or down wood. No aerial ignition will be used.

Fuel Treatment within Riparian Reserves

64. Riparian treatments such as prescribed fire, chipping or piling activity generated fuels by hand or mechanical grapple piling and using an arm that reaches within the EEZ are allowed within the Riparian Reserves.

65. Hand piles that are created within the Riparian Reserve will be placed in a dispersed pattern (i.e., not stacked above one another) and will not be burned within the EEZ but will be maintained for aquatic and riparian habitat. Hand piles that are created in the outer Riparian Reserve may be burned provided that at least five piles per acre remain on site.

General road measures

66. Purchaser or contractor-utilized roads rutted by purchaser/contractor operations shall be spot rocked or otherwise suitably repaired. Drainage structures shall be protected or repaired as necessary. Road surfaces expected to be used during wet weather, in areas crossing serpentine soils, should be rocked to prevent roadbed deformation (rutting) during wet conditions.

67. During mechanical operation where feasible, place slash mats at the bottom of fill slope below the outlets of rolling dips, cross drains and lead-off ditches to reduce erosion and sedimentation coming from the road system. Tamp down with arm to promote good ground contact to improve efficiency of treatments. Retain higher levels of ground cover below roads on stream crossing fill slopes to reduce the erosion and sedimentation generated from road runoff.

68. Where feasible, provide a filter to reduce sedimentation to stream courses by placing slash at the bottom of fill slope at road drainage features (outlets of rolling dips, cross drains and lead-off ditches).

69. Dispose of unsuitable slide and excess fill in stable, non-floodplain sites. Fill material will be inspected by a botanist, weed specialist, or designee prior to moving for presence of invasive species. If invasive species are present, they will be treated prior to moving the fill, and the disposal site will be monitored in the future and treated as necessary.

70. Roads through historic properties may be maintained at their current level where there is no potential for subsurface deposits and where work is confined to previously maintained surfaces, ditches, culverts, and cut and fill slopes within the existing road prism. Activities that are not permitted within the boundaries of historic properties include road reconstruction activities (unless there is no potential for subsurface cultural deposits), road widening, realigning, side casting or depositing of any earthen or vegetative material, equipment staging, and new drainage control work such as wing ditch construction, culvert installation, or replacement.

71. Remove berms from the outside edges of roads that were not removed during fire suppression repair. Removal on native surface roads can be achieved by back blading and bringing the berm material back into the road prism. On roads that are graveled the materials need to be removed and hauled to a suitable spoil site.

72. Water drafting will:
    a. occur at existing sites with existing access;
    b. minimize adverse effects on stream channel stability, sedimentation, and instream flows needed to maintain riparian resources (retain at least 50% of flow), channel conditions, and fish habitat[14];
    c. utilize a fish screen to prevent fish entrapment;
    d. maintain downstream discharge at 1.5 cubic feet per second (CFS) or greater.

73. Roads proposed for treatment that pass through threatened, endangered, proposed, candidate, Forest Service sensitive, survey and manage, or endemic plants, lichens and/or fungi species may be maintained at their current level where there is no potential for surface deposits and work is confined to previously maintained surfaces, ditches, culverts, and cut and fill slopes within the existing road prism. Activities that are not permitted within the boundaries of these populations include road widening, realigning, side casting or depositing of any earthen or vegetative material, new drainage control work such as wing ditch construction or culvert installation, and equipment staging. Consultation with a Shasta Trinity National Forest botanist or designee can be done in order to see if it is possible to work around this depending on the location, proposed activity and the species present.

Temporary roads

74. Temporary roads will be restored by tilling to 18 inches, pulling culverts, pulling fill back to achieve the original contour of hillslope, and either mulching with certified weed-free materials or lopping and scattering or chipping activity generated slash to achieve 2 tons/acre of cover. Areas where soils are very rocky or shallow may not require tilling but only scarification. Temporary roads on slopes less than 15% require little restoration due to minimal soil disturbance and may require only scarification and blockage or any minimal appropriate restoration.

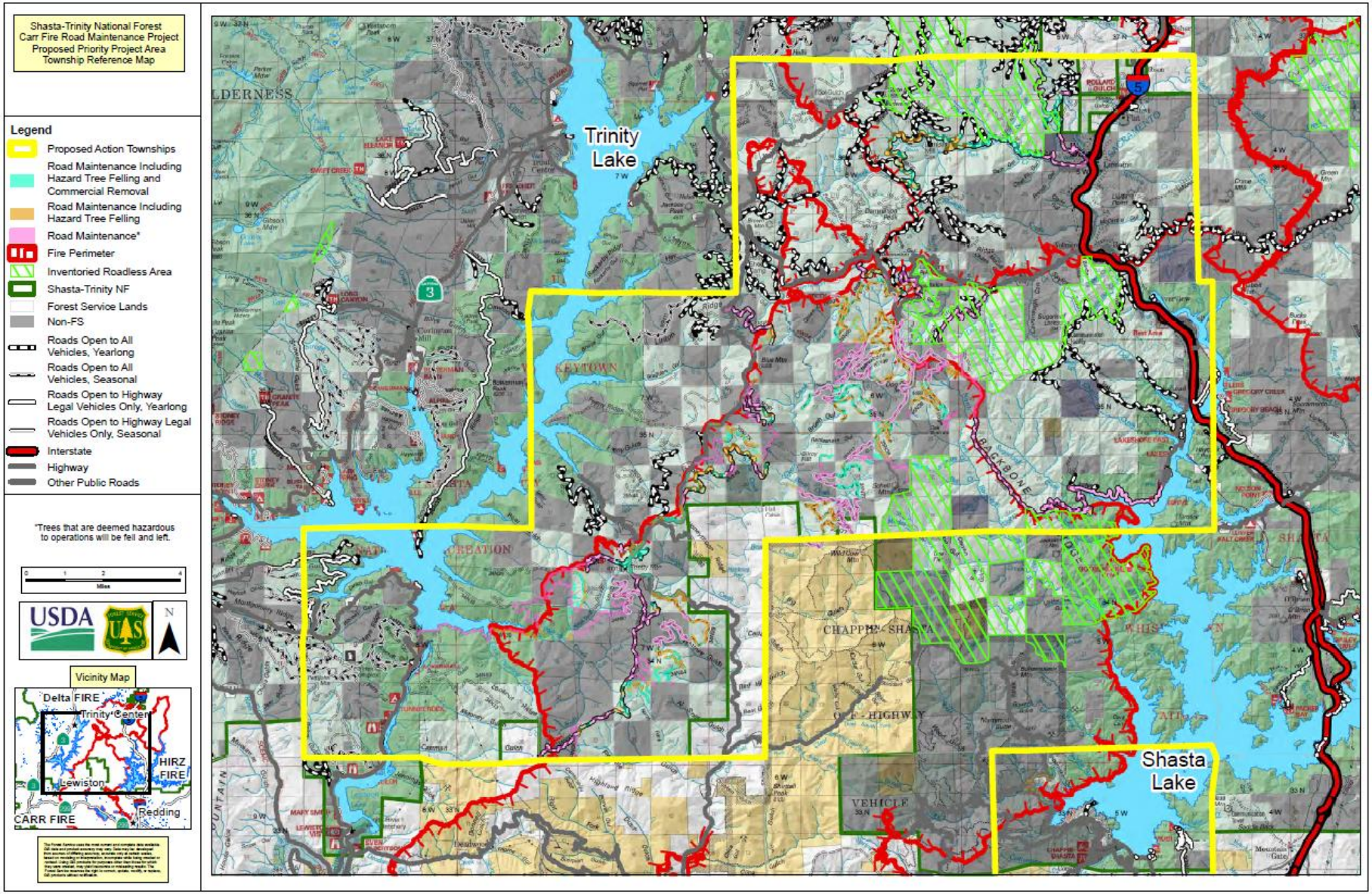
75. If new temporary roads are needed, they will be created outside of NSO nesting/roosting habitat as feasible, or if new temporary roads are constructed within these habitats, will ensure green trees greater than 24” DBH will be retained.

76. No temporary road construction will be allowed in inventoried roadless areas.

[14] Forest Plan Standard and Guideline, page 4-58 in the Forest Plan.

Appendix B

Project Reference Map



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Office of the Assistant Secretary for Civil Rights
1400 Independence Avenue, SW
Washington, D.C. 20250-9410;
(2) fax: (202) 690-7442; or
(3) email: program.intake@usda.gov

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